IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:SHAO et al

	Art Unit:
Serial No.To Be Assigned	Examiner:
Filed: March 13, 2001	Atty. Docket: CL001163

For: ISOLATED HUMAN TRANSPORTER PROTEINS, NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS, AND USES THEREOF

SUBMISSION OF SEQUENCE LISTING
UNDER 37 C.F.R. § 1.821(a)

Honorable Commissioner of
 Patents and Trademarks
Washington, D.C. 20231

Sir:

In compliance with 37 C.F.R. § 1.821(a), applicants submit the Sequence Listing,

including the paper copy of the Sequence Listing and the computer readable copy of the

Sequence Listing.

In the Specification:

The Sequence Listing is provided on pages 59-85 of the specification in the
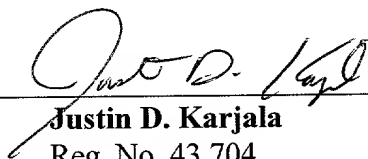
above-identified application.

REMARKS

In accordance with 37 C.F.R. § 1.821(f), the paper copy of the Sequence Listing

and the computer readable copy of the Sequence Listing submitted herewith in the above

application are the same.

It is respectfully believed that this application complies with the Sequence Listing

requirements and is now in condition for processing.

Respectfully submitted,

CELERA GENOMICS

By: _____

Justin D. Karjala

Reg. No. 43,704

Date: __March 13, 2001__

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Rockville, MD 20850

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Fax: 240-453-3084

SEQUENCE LISTING

<110> SHAO, Wei et al.

<120> ISOLATED HUMAN TRANSPORTER PROTEINS,
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    AND USES THEREOF

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61

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<211> 765
<212> PRT
<213> Human

<400> 4

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            20                  25                  30
Asp Asp Phe His Thr Ile Asp Trp Val Arg Glu Lys Cys Lys Asp Arg
        35                  40                  45
Glu Arg His Arg Arg Ile Asn Ser Lys Lys Lys Glu Ser Ala Trp Glu
    50                  55                  60
Met Thr Lys Ser Leu Tyr Asp Ala Trp Ser Gly Trp Leu Val Val Thr
65                  70                  75                  80
Leu Thr Gly Leu Ala Ser Gly Ala Leu Ala Gly Leu Ile Asp Ile Ala
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81

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                    85                      90                      95
Ala Asp Trp Met Thr Asp Leu Lys Glu Gly Ile Cys Leu Ser Ala Leu
            100                     105                     110
Trp Tyr Asn His Glu Gln Cys Cys Trp Gly Ser Asn Glu Thr Thr Phe
        115                     120                     125
Glu Glu Arg Asp Lys Cys Pro Gln Trp Lys Thr Trp Ala Glu Leu Ile
    130                     135                     140
Ile Gly Gln Ala Glu Gly Pro Gly Ser Tyr Ile Met Asn Tyr Ile Met
145                     150                     155                     160
Tyr Ile Phe Trp Ala Leu Ser Phe Ala Phe Leu Ala Val Ser Leu Val
                    165                     170                     175
Lys Val Phe Ala Pro Tyr Ala Cys Gly Ser Gly Ile Pro Glu Ile Lys
                180                     185                     190
Thr Ile Leu Ser Gly Phe Ile Ile Arg Gly Tyr Leu Gly Lys Trp Thr
            195                     200                     205
Leu Met Ile Lys Thr Ile Thr Leu Val Leu Ala Val Ala Ser Gly Leu
        210                     215                     220
Ser Leu Gly Lys Glu Gly Pro Leu Val His Val Ala Cys Cys Cys Gly
225                     230                     235                     240
Asn Ile Phe Ser Tyr Leu Phe Pro Lys Tyr Ser Thr Asn Glu Ala Lys
                    245                     250                     255
Lys Arg Glu Val Leu Ser Ala Ala Ser Ala Ala Gly Val Ser Val Ala
                260                     265                     270
Phe Gly Ala Pro Ile Gly Gly Val Leu Phe Ser Leu Glu Glu Val Ser
            275                     280                     285
Tyr Tyr Phe Pro Leu Lys Thr Leu Trp Arg Ser Phe Phe Ala Ala Leu
        290                     295                     300
Val Ala Ala Phe Val Leu Arg Ser Ile Asn Pro Phe Gly Asn Ser Arg
305                     310                     315                     320
Leu Val Leu Phe Tyr Val Glu Tyr His Thr Pro Trp Tyr Leu Phe Glu
                    325                     330                     335
Leu Phe Pro Phe Ile Leu Leu Gly Val Phe Gly Gly Leu Trp Gly Ala
                340                     345                     350
Phe Phe Ile Arg Ala Asn Ile Ala Trp Cys Arg Arg Arg Lys Ser Thr
            355                     360                     365
Lys Phe Gly Lys Tyr Pro Val Leu Glu Val Ile Ile Val Ala Ala Ile
            370                     375                     380
Thr Ala Val Ile Ala Phe Pro Asn Pro Tyr Thr Arg Leu Asn Thr Ser
385                     390                     395                     400
Glu Leu Ile Lys Glu Leu Phe Thr Asp Cys Gly Pro Leu Glu Ser Ser
                405                     410                     415
Ser Leu Cys Asp Tyr Arg Asn Asp Met Asn Ala Ser Lys Ile Val Asp
            420                     425                     430
Asp Ile Pro Asp Arg Pro Ala Gly Ile Gly Val Tyr Ser Ala Ile Trp
        435                     440                     445
Gln Leu Cys Leu Ala Leu Ile Phe Lys Ile Ile Met Thr Val Phe Thr
    450                     455                     460
Phe Gly Ile Lys Val Pro Ser Gly Leu Phe Ile Pro Ser Met Ala Ile
465                     470                     475                     480
Gly Ala Ile Ala Gly Arg Ile Val Gly Ile Ala Val Glu Gln Leu Ala
                    485                     490                     495
Tyr Tyr His His Asp Trp Phe Ile Phe Lys Glu Trp Cys Glu Val Gly
                500                     505                     510
Ala Asp Cys Ile Thr Pro Gly Leu Tyr Ala Met Val Gly Ala Ala Ala
            515                     520                     525
Cys Leu Gly Gly Val Thr Arg Met Thr Val Ser Leu Val Val Ile Val
        530                     535                     540
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Phe Glu Leu Thr Gly Gly Leu Glu Tyr Ile Val Pro Leu Met Ala Ala
545   550   555   560
Val Met Thr Ser Lys Trp Val Gly Asp Ala Phe Gly Arg Glu Gly Ile
                565   570   575
Tyr Glu Ala His Ile Arg Leu Asn Gly Tyr Pro Phe Leu Asp Ala Lys
                580   585   590
Glu Glu Phe Thr His Thr Thr Leu Ala Ala Asp Val Met Arg Pro Arg
            595   600   605
Arg Asn Asp Pro Pro Leu Ala Val Leu Thr Gln Asp Asn Met Thr Val
        610   615   620
Asp Asp Ile Glu Asn Met Ile Asn Glu Thr Ser Tyr Asn Gly Phe Pro
625   630   635   640
Val Ile Met Ser Lys Glu Ser Gln Arg Leu Val Gly Phe Ala Leu Arg
                645   650   655
Arg Asp Leu Thr Ile Ala Ile Glu Ser Ala Arg Lys Lys Gln Glu Gly
            660   665   670
Ile Val Gly Ser Ser Arg Val Cys Phe Ala Gln His Thr Pro Ser Leu
            675   680   685
Pro Ala Glu Ser Pro Arg Pro Leu Lys Leu Arg Ser Ile Leu Asp Met
    690   695   700
Ser Pro Phe Thr Val Thr Asp His Thr Pro Met Glu Ile Val Val Asp
705   710   715   720
Ile Phe Arg Lys Leu Gly Leu Arg Gln Cys Leu Val Thr His Asn Gly
                725   730   735
Arg Leu Leu Gly Ile Ile Thr Lys Lys Asp Ile Leu Arg His Met Ala
            740   745   750
Gln Thr Ala Asn Gln Asp Pro Ala Ser Ile Met Phe Asn
    755   760   765

<210> 5
<211> 767
<212> PRT
<213> Human

<400> 5
Gly Thr His Tyr Thr Met Thr Asn Gly Gly Ser Ile Asn Ser Ser Thr
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His Leu Leu Asp Leu Leu Asp Glu Pro Ile Pro Gly Val Gly Thr Tyr
                20   25   30
Asp Asp Phe His Thr Ile Asp Trp Val Arg Glu Lys Cys Lys Asp Arg
            35   40   45
Glu Arg His Arg Arg Ile Asn Ser Lys Lys Lys Glu Ser Ala Trp Glu
    50   55   60
Met Thr Lys Ser Leu Tyr Asp Ala Trp Ser Gly Trp Leu Val Val Thr
65   70   75   80
Leu Thr Gly Leu Ala Ser Gly Ala Leu Ala Gly Leu Ile Asp Ile Ala
                85   90   95
Ala Asp Trp Met Thr Asp Leu Lys Glu Gly Ile Cys Leu Ser Ala Leu
                100   105   110
Trp Tyr Asn His Glu Gln Cys Cys Trp Gly Ser Asn Glu Thr Thr Phe
            115   120   125
Glu Glu Arg Asp Lys Cys Pro Gln Trp Lys Thr Trp Ala Glu Leu Ile
    130   135   140
Ile Gly Gln Ala Glu Gly Pro Gly Ser Tyr Ile Met Asn Tyr Ile Met
145   150   155   160
Tyr Ile Phe Trp Ala Leu Ser Phe Ala Phe Leu Ala Val Ser Leu Val

83

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                  165                        170                        175
Lys Val Phe Ala Pro Tyr Ala Cys Gly Ser Gly Ile Pro Glu Ile Lys
            180                        185                   190
Thr Ile Leu Ser Gly Phe Ile Ile Arg Gly Tyr Leu Gly Lys Trp Thr
        195                        200                   205
Leu Met Ile Lys Thr Ile Thr Leu Val Leu Ala Val Ala Ser Gly Leu
    210                        215                   220
Ser Leu Gly Lys Glu Gly Pro Leu Val His Val Ala Cys Cys Cys Gly
225                        230                   235                   240
Asn Ile Phe Ser Tyr Leu Phe Pro Lys Tyr Ser Thr Asn Glu Ala Lys
                  245                        250                   255
Lys Arg Glu Val Leu Ser Ala Ala Ser Ala Ala Gly Val Ser Val Ala
            260                        265                   270
Phe Gly Ala Pro Ile Gly Gly Val Leu Phe Ser Leu Glu Glu Val Ser
        275                        280                   285
Tyr Tyr Phe Pro Leu Lys Thr Leu Trp Arg Ser Phe Phe Ala Ala Leu
    290                        295                   300
Val Ala Ala Phe Val Leu Arg Ser Ile Asn Pro Phe Gly Asn Ser Arg
305                        310                        315                   320
Leu Val Leu Phe Tyr Val Glu Tyr His Thr Pro Trp Tyr Leu Phe Glu
                  325                        330                   335
Leu Phe Pro Phe Ile Leu Leu Gly Val Phe Gly Gly Leu Trp Gly Ala
            340                        345                   350
Phe Phe Ile Arg Ala Asn Ile Ala Trp Cys Arg Arg Arg Lys Ser Thr
        355                        360                   365
Lys Phe Gly Lys Tyr Pro Val Leu Glu Val Ile Ile Val Ala Ala Ile
    370                        375                   380
Thr Ala Val Ile Ala Phe Pro Asn Pro Tyr Thr Arg Leu Asn Thr Ser
385                        390                        395                   400
Glu Leu Ile Lys Glu Leu Phe Thr Asp Cys Gly Pro Leu Glu Ser Ser
                  405                        410                   415
Ser Leu Cys Asp Tyr Arg Asn Asp Met Asn Ala Ser Lys Ile Val Asp
            420                        425                   430
Asp Ile Pro Asp Arg Pro Ala Gly Ile Gly Val Tyr Ser Ala Ile Trp
        435                        440                   445
Gln Leu Cys Leu Ala Leu Ile Phe Lys Ile Ile Met Thr Val Phe Thr
    450                        455                   460
Phe Gly Ile Lys Val Pro Ser Gly Leu Phe Ile Pro Ser Met Ala Ile
465                        470                        475                   480
Gly Ala Ile Ala Gly Arg Ile Val Gly Ile Ala Val Glu Gln Leu Ala
                  485                        490                   495
Tyr Tyr His His Asp Trp Phe Ile Phe Lys Glu Trp Cys Glu Val Gly
            500                        505                   510
Ala Asp Cys Ile Thr Pro Gly Leu Tyr Ala Met Val Gly Ala Ala Ala
        515                        520                   525
Cys Leu Gly Gly Val Thr Arg Met Thr Val Ser Leu Val Val Ile Val
    530                        535                   540
Phe Glu Leu Thr Gly Gly Leu Glu Tyr Ile Val Pro Leu Met Ala Ala
545                        550                        555                   560
Val Met Thr Ser Lys Trp Val Gly Asp Ala Phe Gly Arg Glu Gly Ile
                  565                        570                   575
Tyr Glu Ala His Ile Arg Leu Asn Gly Tyr Pro Phe Leu Asp Ala Lys
            580                        585                   590
Glu Glu Phe Glu Phe Thr His Thr Thr Leu Ala Ala Asp Val Met Arg
        595                        600                   605
Pro Arg Arg Asn Asp Pro Pro Leu Ala Val Leu Thr Gln Asp Asn Met
    610                        615                   620
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84

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Thr Val Asp Asp Ile Glu Asn Met Ile Asn Glu Thr Ser Tyr Asn Gly
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Phe Pro Val Ile Met Ser Lys Glu Ser Gln Arg Leu Val Gly Phe Ala
                645             650                     655
Leu Arg Arg Asp Leu Thr Ile Ala Ile Glu Ser Ala Arg Lys Lys Gln
            660             665                     670
Glu Gly Ile Val Gly Ser Ser Arg Val Cys Phe Ala Gln His Thr Pro
        675             680                 685
Ser Leu Pro Ala Glu Ser Pro Arg Pro Leu Lys Leu Arg Ser Ile Leu
    690             695             700
Asp Met Ser Pro Phe Thr Val Thr Asp His Thr Pro Met Glu Ile Val
705             710             715                         720
Val Asp Ile Phe Arg Lys Leu Gly Leu Arg Gln Cys Leu Val Thr His
            725             730                     735
Asn Gly Arg Leu Leu Gly Ile Ile Thr Lys Lys Asp Ile Leu Arg His
            740             745                     750
Met Ala Gln Thr Ala Asn Gln Asp Pro Ala Ser Ile Met Phe Asn
        755             760                 765
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<210> 6
<211> 60
<212> PRT
<213> Xenopus laevis

<400> 6
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1               5               10                      15
Asn Ile Pro Leu Arg Asp Leu His Lys Arg Gly Thr His Tyr Thr Val
            20              25                      30
Thr Asn Gly Gly Ala Ile Asn Ser Thr Thr His Leu Leu Asp Leu Leu
        35              40                      45
Asp Glu Pro Ile Pro Gly Val Gly Thr Tyr Asp Asp
    50              55                  60
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